

FIG. 1, native human IL-13 (SEQ ID NO. 1)

G P V P P S T A L R E L I E E L V N I T Q N Q K
A P L C N G S M V W S I N L T A G M Y C A A L E
S L I N V S G C S A I E K T Q R M L S G F C P H
K V S A G Q F S S L H V R D T K I E V A Q F V K
D L L L H L K K L F R E G R F N *

FIG. 2, native murine IL-13 (SEQ ID NO. 2)

G P V P R S V S L P L T L K E L I E E L S N I T Q
D Q T P L C N G S M V W S V D L A A G G F C V A
L D S L T N I S N C N A I Y R T Q R I L H G L C
N R K A P T T V S S L P D T K I E V A H F I T K
L L S Y T K Q L F R H G P F *

10

FIG. 3, Alignment of several mammalian IL-13 sequences

	*	20	*	40	*	60	*
HUMAN	:	GPVPP-----	STALRELIEELVNITQ	NQKAPLCNGSMVWSINLTAGM-	YCAALES	LTINVSGCSAIEKTQRM	*
PIG	:	GPVPPH-----	STALKELIEELVNITQ	NQKTPLCNGSMVWSVNLTTSMQYCAALES	LTINISDCSAIQKTQRM		
BOVIN	:	SPVPS-----	ATALKELIEELVNITQ	NQKVPLCNGSMVWSNLTTSSM-	YCAALDSLISNCSVIQRTKKM		
DOG	:	SPVTP-----	SPTLKELEELVNITQ	NQ-ASLCNGSMVWSVNLTAGM-	YCAALES	LTINVSDCSAIQRTQRM	
MOUSE	:	GPVPRSVSLPLTLKELEELS	SNITQDQ--TPLCNGSMVWSVDLAAGG-	FCVALDSL	TNINISCNAIYRTQRI		
RAT	:	GPVRRSTSPVALRELIEELS	SNITQDQKTSLCNSMVWSVDLTAGG-	FCAALES	LTNISSCNAIHRTQRI		
		80	*	100	*		
HUMAN	:	LSGFCPHKVSAGQFSS	LHV	RD	TKIEVAQFVKDLLHLKLF	REG	RFN
PIG	:	LSALCSHKPPSEQVPG	KH	IRD	TKIEVAQFVKDLLKHLRMI	FRHG--	
BOVIN	:	LNALCPHKPSAKQVS	SEYVRD	TKIEVAQFVKDLLRHSRI	VFRNERFN		
DOG	:	LKALCSQKPAAGQISS	ERSRD	TKIEVIQLVKNLLTYVRGVYR	HGNFR		
MOUSE	:	LHGLCNRKAP-TTVSS--	LPD	TKIEVAHFITKLLSYTKQLFRHGPF--			
RAT	:	LNGLCNQKAS-DVASS--	PPD	TKIEVAQFISKLLNYSKQLFRYGH--			

SEQ ID NO.1
SEQ ID NO.3
SEQ ID NO.4
SEQ ID NO.5
SEQ ID NO.2
SEQ ID NO.6

FIG. 4, IL-13 sequences from non-human primates

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1   S P V P P S T A L K E L I E E L V N I T
1   S P V P R S T A L K E L I E E L V N I T
1   G P V P P Y T A L K E L I E E L V N I T

21  Q N Q K A P L C N G S M V W S I N L T A
21  Q N Q K A P L C N G S M V W S I N L T A
21  Q N Q K A P L C N G S M V W S I N M T A

41  G V Y C A A L E S L I N V S G C S A I E
41  G V Y C A A L E S L I N V S G C S A I E
41  G V Y C A A L E S L I N V S G C S A I E

61  K T Q R M L N G F C P H K V S A G Q F S
61  K T Q R M L N G F C P H K V S A G Q F S
61  K T Q R M L S G F C P H K V S A G Q F S

81  S L R V R D T K I E V A Q F V K D L L V
81  S L R V R D T K I E V A Q F V K D L L V
81  S L L V R D T K I E V A Q F V K D L L R

101 H L K K L F R E G Q F N . cynomolgus IL13 SEQ ID NO.7
101 H L K K L F R E G R F N . rhesus IL13 SEQ ID NO.8
101 H L R K L F H Q G T F N . marmoset IL13 SEQ ID NO.9
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FIG. 5, Immunogen 1 (SEQ ID NO. 10)

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1  GGCCTGTGCCTCCCTCTAGCGCCCTCAAGGAGCTCATTGAGGAGCTGGCCAACATCACC 60
   -----+-----+-----+-----+-----+-----+
   CCGGGACACGGAGGGAGATCGCGGGAGTTCCTCGAGTAACTCCTCGACCGGTTGTAGTGG
   G P V P P S S A L K E L I E E L A N I T

61  CAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCT 120
   -----+-----+-----+-----+-----+
   GTCTTGGTCTTCCGAGGCGAGACGTTACCGTCGTACCATACTCGTAGTTGGACTGTCTGA
   Q N Q K A P L C N G S M V W S I N L T A

121  GGCATGTACTGTGCAGCCCTGGACTCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAG 180
   -----+-----+-----+-----+-----+
   CCGTACATGACACGTCGGGACCTGAGGGACTAGTTGCACAGTCCGACGTCACGGTAGCTC
   G M Y C A A L D S L I N V S G C S A I E

181  CGGACCCAGAGGATCTTGAGCGCCTTCTGCCCCACAAAGGTCTCAGCTGGGCAGTTTTC 240
   -----+-----+-----+-----+-----+
   GCCTGGGTCTCCTAGAACTCGCGGAAGACGGGCGTGTTCAGAGTCGACCCGTCAAAGG
   R T Q R I L S A F C P H K V S A G Q F S

241  AGCTTGCCTGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAACGGACCTGCTCGTA 300
   -----+-----+-----+-----+-----+
   TCGAACGCACAGGCTCTGTGGTTTTAGCTCCACCGGGTCAAACATTGCCTGGACGAGCAT
   S L R V R D T K I E V A Q F V T D L L V

301  CATTTAAAGAGACTTTTTTCGCCAGGGAACGTTCAAC 336
   -----+-----+-----+-----+
   GTAAATTTCTCTGAAAAAGCGGTCCCTTGCAAGTTG
   H L K R L F R Q G T F N
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FIG. 6, Immunogen 2 (SEQ ID NO. 11)

G	P	V	P	P	S	T	A	L	R	E	L	I	E	E	L	V	N	I	T
Q	N	Q	K	A	P	L	C	N	G	S	M	V	W	S	I	N	L	T	A
G	M	Y	C	A	A	L	E	S	L	I	N	V	S	G	C	S	A	I	E
K	T	Q	R	M	L	G	G	F	C	P	H	K	F	N	N	F	T	V	S
F	W	L	R	V	P	K	V	S	A	S	H	L	E	D	T	K	I	E	V
A	Q	F	V	K	D	L	L	L	H	L	K	K	L	F	R	E	G	R	F
N																			

FIG. 7, Immunogen 3 (SEQ ID NO. 12)

F	N	N	F	T	V	S	F	W	L	R	V	P	K	V	S	A	S	H	L
E	G	P	V	P	P	S	T	A	L	R	E	L	I	E	E	L	V	N	I
T	Q	N	Q	K	A	P	L	C	N	G	S	M	V	W	S	I	N	L	T
A	G	M	Y	C	A	A	L	E	S	L	I	N	V	S	G	C	S	A	I
E	K	T	Q	R	M	L	G	G	F	C	P	H	K	V	S	A	G	Q	F
S	S	L	H	V	R	D	T	K	I	E	V	A	Q	F	V	K	D	L	L
L	H	L	K	K	L	F	R	E	G	R	F	N							

FIG. 8, Immunogen 4 (SEQ ID NO. 13)

G	P	V	P	R	S	V	S	L	P	L	T	L	K	E	L	I	E	E	L
S	N	I	T	Q	D	Q	T	P	L	C	N	G	S	M	V	W	S	V	D
L	A	A	G	G	F	C	V	A	L	D	S	L	T	N	I	S	N	C	N
A	I	Y	R	T	Q	R	I	L	H	G	L	C	N	R	K	F	N	N	F
T	V	S	F	W	L	R	V	P	K	V	S	A	S	H	L	E	D	T	K
I	E	V	A	H	F	I	T	K	L	L	S	Y	T	K	Q	L	F	R	H
P	F																		G

FIG. 9, Immunogen 5 (SEQ ID NO. 14)

F	N	N	F	T	V	S	F	W	L	R	V	P	K	V	S	A	S	H	L
E	G	P	V	P	R	S	V	S	L	P	L	T	L	K	E	L	I	E	E
L	S	N	I	T	Q	D	Q	T	P	L	C	N	G	S	M	V	W	S	V
D	L	A	A	G	G	F	C	V	A	L	D	S	L	T	N	I	S	N	C
N	A	I	Y	R	T	Q	R	I	L	H	G	L	C	N	R	K	A	P	T
T	V	S	S	L	P	D	T	K	I	E	V	A	H	F	I	T	K	L	L
S	Y	T	K	Q	L	F	R	H	G	P	F								

FIG. 10 Immunogen 6 (SEQ ID NO. 15)

F	N	N	F	T	V	S	F	W	L	R	V	P	K	V	S	A	S	H	L
E	G	P	V	P	R	S	V	S	L	P	V	T	L	K	E	L	I	E	E
L	T	N	I	T	Q	D	Q	T	P	L	C	N	G	S	M	V	W	S	V
D	L	A	A	G	G	F	C	V	A	L	D	S	L	T	N	I	S	N	C
N	A	I	F	R	T	Q	R	I	L	H	A	L	C	N	R	K	A	P	T
T	V	S	S	L	P	D	T	K	I	E	V	A	H	F	I	T	K	L	L
T	Y	T	K	N	L	F	R	R	G	P	F								

FIG 11, Immunogen 7 (SEQ ID NO. 16)

TACGTACATTCCGACGGCTCTTATCCAAAAGACAAGTTTGAGAAAATCAATGGCACTTGG
-----+-----+-----+-----+-----+
Y V H S D G S Y P K D K F E K I N G T W
TACTACTTTGACAGTTCAGGCTATATGCTTGACAGCCGCTGGAGGAAGCACACAGACGGC
-----+-----+-----+-----+-----+
Y Y F D S S G Y M L A D R W R K H T D G
AACTGGTACTGGTTCGACAACCTCAGGCGAAATGGCTACAGGCTGGAAGAAAATCGCTGAT
-----+-----+-----+-----+-----+
N W Y W F D N S G E M A T G W K K I A D
AAGTGGTACTATTTCAACGAAGAAGGTGCCATGAAGACAGGCTGGGTCAAGTACAAGGAC
-----+-----+-----+-----+-----+
K W Y Y F N E E G A M K T G W V K Y K D
ACTTGGTACTACTTAGACGCTAAAGAAGGCGCCATGCAATACATCAAGGCTAACTCTAAG
-----+-----+-----+-----+-----+
T W Y Y L D A K E G A M Q Y I K A N S K
TTCATTGGTATCACTGAAGGCGTCATGGTATCAAATGCCTTTATCCAGTCAGCGGACGGA
-----+-----+-----+-----+-----+
F I G I T E G V M V S N A F I Q S A D G
ACAGGCTGGTACTACCTCAAACCAGACGGAACACTGGCAGACAGGCCAGAAGGCCCTGTG
-----+-----+-----+-----+-----+
T G W Y Y L K P D G T L A D R P E G P V
CCTCCCTCTAGCGCCCTCAAGGAGCTCATTGAGGAGCTGGCCAACATCACCCAGAACCAG
-----+-----+-----+-----+-----+
P P S S A L K E L I E E L A N I T Q N Q
AAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCTGGCATGTAC
-----+-----+-----+-----+-----+
K A P L C N G S M V W S I N L T A G M Y
TGTGCAGCCCTGGACTCCCTGATCAACGTGTGAGGCTGCAGTGCCATCGAGCGGACCCAG
-----+-----+-----+-----+-----+
C A A L D S L I N V S G C S A I E R T Q
AGGATCTTGAGCGCCTTCTGCCCGCACAAAGTCTCAGCTGGGCAGTTTTCCAGCTTGCGT
-----+-----+-----+-----+-----+
R I L S A F C P H K V S A G Q F S S L R
GTCCGAGACACCAAAATCGAGGTGGCCCAAGTTTGTAAACGGACCTGCTCGTACATTTAAAG
-----+-----+-----+-----+-----+
V R D T K I E V A Q F V T D L L V H L K
AGACTTTTTTCGCCAGGGAACGTTCAAC
-----+-----+-----+-----+-----+
R L F R Q G T F N

FIG. 12, Immunogen 8 (SEQ ID NO. 17)

TCCTCTCATTCTTCTAACATGGCGAACACCCAGATGAAGTCCGATAAAATCATCATCGCG
-----+-----+-----+-----+-----+-----+
S S H S S N M A N T Q M K S D K I I I A
CACAGGGGAGCTAGCGGGTATCTGCCTGAGCACACCCTGGAGTCCAAGGCTCTGGCGTTC
-----+-----+-----+-----+-----+-----+
H R G A S G Y L P E H T L E S K A L A F
GCCCAGCAGGCTGACTACCTGGAGCAGGACCTGGCGATGACAAAGGATGGCCGCCTCGTG
-----+-----+-----+-----+-----+-----+
A Q Q A D Y L E Q D L A M T K D G R L V
GTGATCCATGACCATTTTCTCGACGGACTGACCGACGTCGCCAAGAAGTTCCCCACCGC
-----+-----+-----+-----+-----+-----+
V I H D H F L D G L T D V A K K F P H R
CATAGGAAGGACGGGAGGTATTACGTGATTGACTTCACCCTCAAGGAGATCCAGAGCCTG
-----+-----+-----+-----+-----+-----+
H R K D G R Y Y V I D F T L K E I Q S L
GAGATGACCGAGAACTTCGAGACCGGCCCTGTGCCTCCCTCTAGCGCCCTCAAGGAGCTC
-----+-----+-----+-----+-----+-----+
E M T E N F E T G P V P P S S A L K E L
ATTGAGGAGCTGCGCAACATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATG
-----+-----+-----+-----+-----+-----+
I E E L A N I T Q N Q K A P L C N G S M
GTATGGAGCATCAACCTGACAGCTGGCATGTACTGTGCAGCCCTGGACTCCCTGATCAAC
-----+-----+-----+-----+-----+-----+
V W S I N L T A G M Y C A A L D S L I N
GTGTCAGGCTGCAGTGCCATCGAGCGGACCCAGAGGATCTTGAGCGCCTTCTGCCCCGAC
-----+-----+-----+-----+-----+-----+
V S G C S A I E R T Q R I L S A F C P H
AAGGTCTCAGCTGGGCAGTTTTCCAGCTTGCGTGTCCGAGACACCAAATCGAGGTGGCC
-----+-----+-----+-----+-----+-----+
K V S A G Q F S S L R V R D T K I E V A
CAGTTTGTAAAGGACCTGCTCGTACATTTAAAGAGACTTTTTCGCCAGGGAACGTTCAAC
-----+-----+-----+-----+-----+-----+
Q F V T D L L V H L K R L F R Q G T F N

FIG. 13, Immunogen 9 (SEQ ID NO. 18)

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TTTAATAATTTTACCGTTAGCTTTTGGTTGCGTGTTCCTAAAGTATCTGCTAGTCATTTA
-----+-----+-----+-----+-----+
F N N F T V S F W L R V P K V S A S H L

GAAGGCCCTGTGCCTCCCTCTAGCGCCCTCAAGGAGCTCATTGAGGAGCTGGCCAACATC
-----+-----+-----+-----+-----+
E G P V P P S S A L K E L I E E L A N I

ACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACA
-----+-----+-----+-----+-----+
T Q N Q K A P L C N G S M V W S I N L T

GCTGGCATGTACTGTGCAGCCCTGGACTCCCTGATCAACGTGTCAGGCTGCAGTGCCATC
-----+-----+-----+-----+-----+
A G M Y C A A L D S L I N V S G C S A I

GAGCGGACCCAGAGGATCTTGAGCGCCTTCTGCCCGCACAAAGGTCTCAGCTGGGCAGTTT
-----+-----+-----+-----+-----+
E R T Q R I L S A F C P H K V S A G Q F

TCCAGCTTGCGTGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAACGGACCTGCTC
-----+-----+-----+-----+-----+
S S L R V R D T K I E V A Q F V T D L L

GTACATTTAAAGAGACTTTTTCGCCAGGGAACGTTCAAC
-----+-----+-----+-----+-----+
V H L K R L F R Q G T F N
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FIG. 14, Immunogen 10 (SEQ ID NO. 19)

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TTTAATAATTTTACCGTTAGCTTTTGGTTGCGTGTTCCTAAAGTATCTGCTAGTCATTTA
-----+-----+-----+-----+-----+-----+
F N N F T V S F W L R V P K V S A S H L

GAAGGCCCTGTGCCTCCCTCTAGCGCCCTCAAGATTCTCATTGAGGAGCTGGCCAACATC
-----+-----+-----+-----+-----+-----+
E G P V P P S S A L K I L I E E L A N I

ACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACA
-----+-----+-----+-----+-----+-----+
T Q N Q K A P L C N G S M V W S I N L T

GCTGGCATGTACTGTGCAGCCCTGGACTCCCTGATCAACGTGTCAGGCTGCAGTGCCATC
-----+-----+-----+-----+-----+-----+
A G M Y C A A L D S L I N V S G C S A I

GAGCGGACCCAGAGGATCTTGAGCGCCTTCTGCCCCGACAAGGTCTCAGCTGGGCAGTTT
-----+-----+-----+-----+-----+-----+
E R T Q R I L S A F C P H K V S A G Q F

TCCAGCTTGCGTGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAAACGGACCTGCTC
-----+-----+-----+-----+-----+-----+
S S L R V R D T K I E V A Q F V T D L L

GTACATTTAAAGAGACTTTTTCGCCAGGGAACGTTCAAC
-----+-----+-----+-----+-----+
V H L K R L F R Q G T F N
```

FIG 15, Immunogen 11 (SEQ ID NO. 20)

G P V P P S S A L K E L I E E L A N I T
Q N Q K A P L C N G S M V W S I N L T A
G M Y C A A L D S L I N V S G C S A I E
R T Q R I L S A F C P H K V S A G Q F S
S L H V R D T K I E V A Q F V T D L L V
H L K R L F R Q G R F N

FIG. 16, Immunogen 12 (SEQ ID NO. 21)

G P V P P S T A L K E L I E E L V N I T
Q N Q K A P L C N G S M V W S I N L T A
G M Y C A A L D S L I N V S G C S A I E
R T Q R I L S A F C P H K V S A G Q F S
S L R V R D T K I E V A Q F V T D L L V
H L K K L F R Q G T F N

FIG. 17, Immunogen 13 (SEQ ID NO. 22)

G P V P P S S A L R E L I E E L A N I T Q N Q K A P L C N G
S M V W S I N L T A G M Y C A A L E S L I N V S G C S A I D
K T Q R M L S A F C P H K V S A G Q F S S L H V R D T K I E
V A Q F V K D L L V H L K R L F R D G R F N

FIG. 18, pCDNmIL13CDFC (SEQ ID NO. 23)

[illegible]

CAAGACAAAGCCGCGGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAGCGTCCTCAC
1681 -----+-----+-----+-----+-----+-----+ 1740

b K T K P R E E Q Y N S T Y R V V S V L T -
CGTCCTGCACCAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCCAACAAAGC
1741 -----+-----+-----+-----+-----+-----+ 1800

b V L H Q D W L N G K E Y K C K V S N K A -
CCTCCCAGCCCCATCGAGAAAACCATCTCCAAAGCCAAAGGGCAGCCCCGAGAACCACA
1801 -----+-----+-----+-----+-----+-----+ 1860

b L P A P I E K T I S K A K G Q P R E P Q -
GGTGTACACCTGCCCCCATCCCGGAGGAGATGACCAAGAACCAGGTCAGCCTGACCTG
1861 -----+-----+-----+-----+-----+-----+ 1920

b V Y T L P P S R E E M T K N Q V S L T C -
CCTGGTCAAAGGCTTCTATCCCAGCGACATCGCCGTGGAGTGGGAGAGCAATGGGCAGCC
1921 -----+-----+-----+-----+-----+-----+ 1980

b L V K G F Y P S D I A V E W E S N G Q P -
GGAGAACAACCTACAAGACCACGCCTCCCGTGTGGACTCCGACGGCTCCTTCTTCTCTA
1981 -----+-----+-----+-----+-----+-----+ 2040

b E N N Y K T T P P V L D S D G S F F L Y -
TAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACGTCTTCTCATGCTCCGT
2041 -----+-----+-----+-----+-----+-----+ 2100

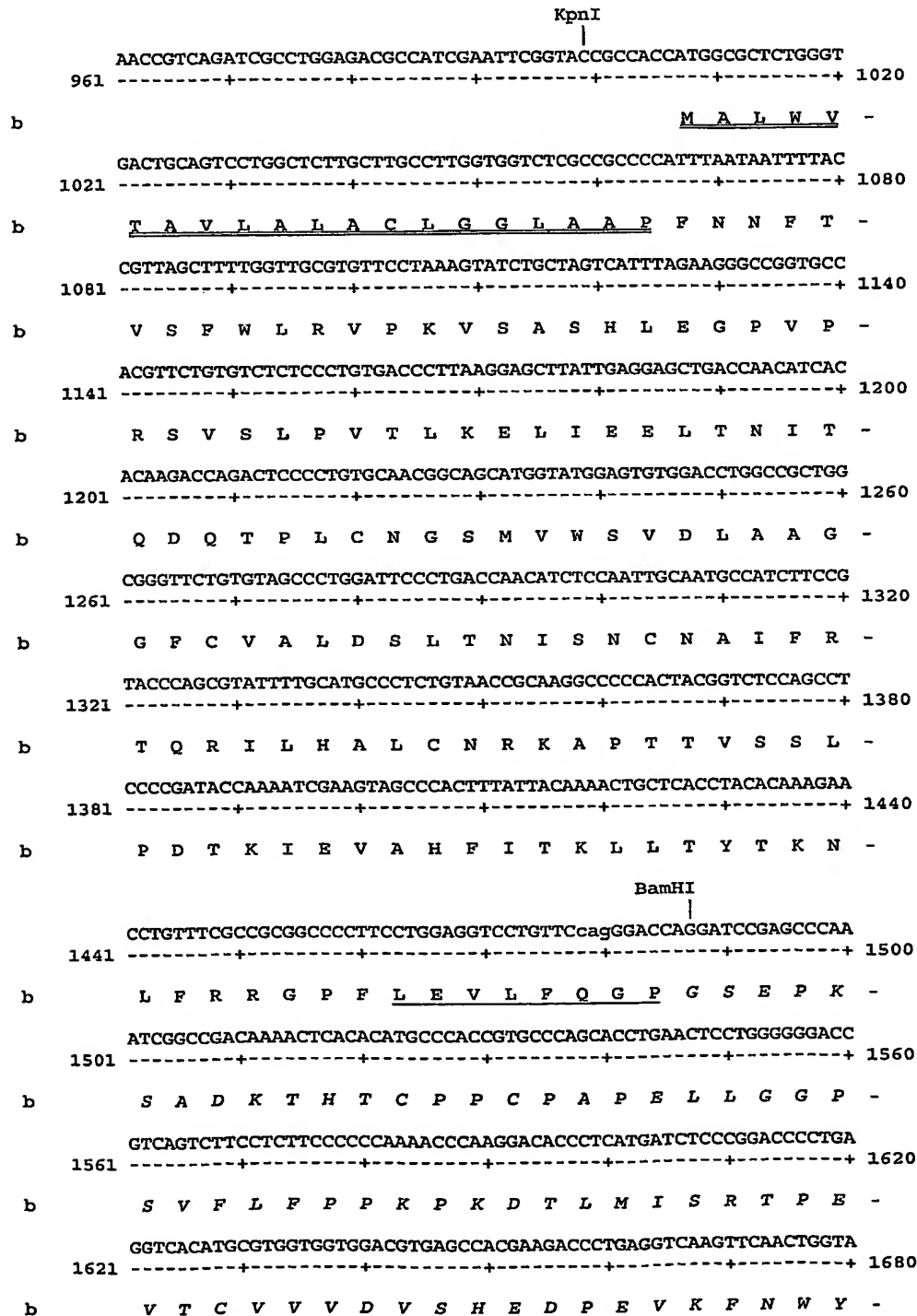
b S K L T V D K S R W Q Q G N V F S C S V -
GATGCATGAGGCTCTGCACAACCACTACACGCAGAAGAGCCTCTCCCTGTCTCCGGGTAA
2101 -----+-----+-----+-----+-----+-----+ 2160

b M H E A L H N H Y T Q K S L S L S P G K -
BamHI
|
ATGAGTGTAGATCCGTTAACGTTACCAACTACCTAGGGATCCGTTAACGTTACCAACT
2161 -----+-----+-----+-----+-----+-----+ 2220

b *

1681 -----+-----+-----+-----+-----+-----+ 1740
b V D G V E V H N A K T K P R E E Q Y N S -
CACGTACCGTGTGGTCAGCGTCCTCACCGTCCTGCACCAGGACTGGCTGAATGGCAAGGA
1741 -----+-----+-----+-----+-----+-----+ 1800
b T Y R V V S V L T V L H Q D W L N G K E -
GTACAAGTGCAAGGTCTCCAACAAGCCCTCCCAGCCCCATCGAGAAAACCATCTCCAA
1801 -----+-----+-----+-----+-----+-----+ 1860
b Y K C K V S N K A L P A P I E K T I S K -
AGCCAAAGGGCAGCCCCGAGAACCACAGGTGTACACCCTGCCCCATCCCGGGAGGAGAT
1861 -----+-----+-----+-----+-----+-----+ 1920
b A K G Q P R E P Q V Y T L P P S R E E M -
GACCAAGAACCAGGTCAGCCTGACCTGCCTGGTCAAAGGCTTCTATCCAGCGACATCGC
1921 -----+-----+-----+-----+-----+-----+ 1980
b T K N Q V S L T C L V K G F Y P S D I A -
CGTGGAGTGGGAGAGCAATGGGCAGCCGAGAGAACAATAAAGACCACGCCTCCCGTGCT
1981 -----+-----+-----+-----+-----+-----+ 2040
b V E W E S N G Q P E N N Y K T T P P V L -
GGACTCCGACGGCTCCTTCTCCTCTATAGCAAGCTCACCGTGGACAAGAGCAGGTGGCA
2041 -----+-----+-----+-----+-----+-----+ 2100
b D S D G S F F L Y S K L T V D K S R W Q -
GCAGGGGAACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCA
2101 -----+-----+-----+-----+-----+-----+ 2160
b Q G N V F S C S V M H E A L H N H Y T Q -
GAAGAGCCTCTCCCTGTCTCCGGGTAAATGAGTGTAGATCCGTTAACGGTTACCAACTAC
2161 -----+-----+-----+-----+-----+-----+ 2220
b K S L S L S P G K * -

FIG. 20, pCDNcIL13newFC (SEQ ID NO. 26)



CGTGGACGCGTGGAGGTGCATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTACAACAG
1681 -----+-----+-----+-----+-----+ 1740

b V D G V E V H N A K T K P R E E Q Y N S -
CACGTACCGTGTGGTCAGCGTCCTCACCCTCCTGCACCAGGACTGGCTGAATGGCAAGGA
1741 -----+-----+-----+-----+-----+ 1800

b T Y R V V S V L T V L H Q D W L N G K E -
GTACAAGTGCAAGGTCTCCAACAAAGCCCTCCCAGCCCCCATCGAGAAAACCATCTCCAA
1801 -----+-----+-----+-----+-----+ 1860

b Y K C K V S N K A L P A P I E K T I S K -
AGCCAAAGGGCAGCCCCGAGAACACAGGTGTACACCCTGCCCCCATCCCGGGAGGAGAT
1861 -----+-----+-----+-----+-----+ 1920

b A K G Q P R E P Q V Y T L P P S R E E M -
GACCAAGAACCAGGTCAGCCTGACCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATCGC
1921 -----+-----+-----+-----+-----+ 1980

b T K N Q V S L T C L V K G F Y P S D I A -
CGTGGAGTGGGAGAGCAATGGGCAGCCGAGAACAACTACAAGACCACGCCTCCCGTGCT
1981 -----+-----+-----+-----+-----+ 2040

b V E W E S N G Q P E N N Y K T T P P V L -
GGACTCCGACGGCTCCTTCTCCTCTATAGCAAGCTCACCGTGGACAAGAGCAGGTGGCA
2041 -----+-----+-----+-----+-----+ 2100

b D S D G S F F L Y S K L T V D K S R W Q -
GCAGGGGAACGTCTTCTCATGTCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCA
2101 -----+-----+-----+-----+-----+ 2160

b Q G N V F S C S V M H E A L H N H Y T Q -
GAAGAGCCTCTCCCTGTCTCCGGTAAATGAGTGTAGATCCGTAAACGGTTACCAACTAC
2161 -----+-----+-----+-----+-----+ 2220

b K S L S L S P G K *

FIG. 21, pCDNIL13oldFC (SEQ ID NO. 29)

[illegible]

GTACCGTGTGGTCAGCGTCCTCACCCTCCTGCACCAGGACTGGCTGAATGGCAAGGAGTA
1681 -----+-----+-----+-----+-----+-----+ 1740
b Y R V V S V L T V L H Q D W L N G K E Y -
CAAGTGCAAGGTCTCCAACAAAGCCCTCCCAGCCCCCATCGAGAAAACCATCTCCAAGC
1741 -----+-----+-----+-----+-----+-----+ 1800
b K C K V S N K A L P A P I E K T I S K A -
CAAAGGGCAGCCCCGAGAACCAAGGTGTACACCCTGCCCCCATCCCGGGAGGAGATGAC
1801 -----+-----+-----+-----+-----+-----+ 1860
b K G Q P R E P Q V Y T L P P S R E E M T -
CAAGAACCAGGTGACCTGACCTGCCTGGTCAAAGGCTTCTATCCAGCGACATCGCCGT
1861 -----+-----+-----+-----+-----+-----+ 1920
b K N Q V S L T C L V K G F Y P S D I A V -
GGAGTGGGAGAGCAATGGGCAGCCGAGAACAACTACAAGACCACGCCTCCCGTGTGGA
1921 -----+-----+-----+-----+-----+-----+ 1980
b E W E S N G Q P E N N Y K T T P P V L D -
CTCCGACGGCTCCTTCTCCTCTATAGCAAGCTCACCCTGGACAAGAGCAGGTGGCAGCA
1981 -----+-----+-----+-----+-----+-----+ 2040
b S D G S F F L Y S K L T V D K S R W Q Q -
GGGGAACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAGAA
2041 -----+-----+-----+-----+-----+-----+ 2100
b G N V F S C S V M H E A L H N H Y T Q K -
GAGCCTCTCCCTGTCTCCGGGTAAATGAGTGTAGATCCGTTAACGGTTACCAACTACCTA
2101 -----+-----+-----+-----+-----+-----+ 2160
b S L S L S P G K * -

Figure 22,

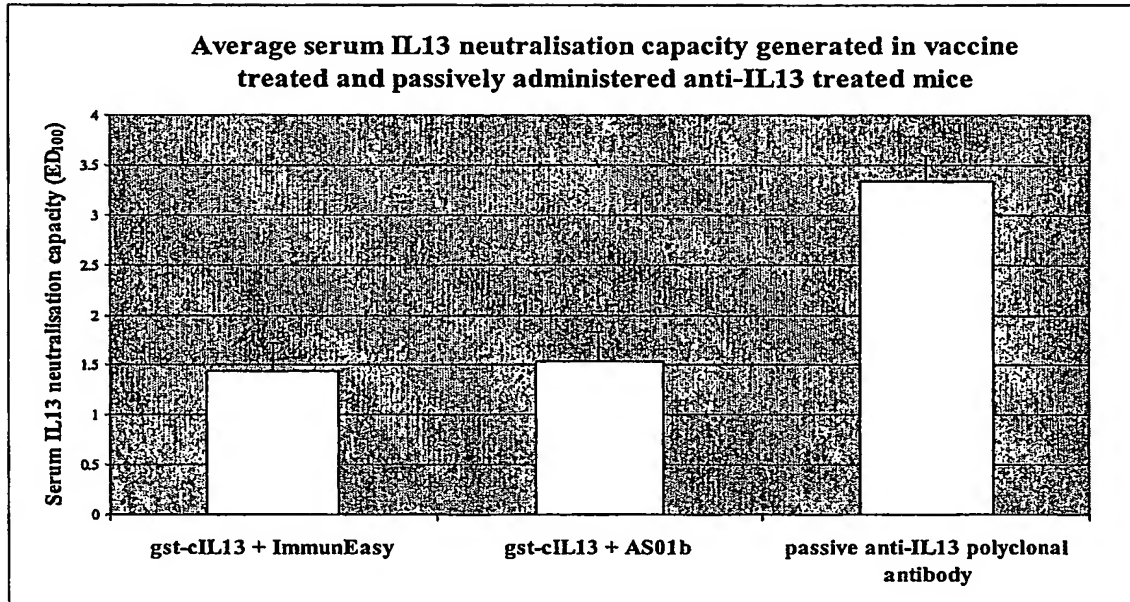
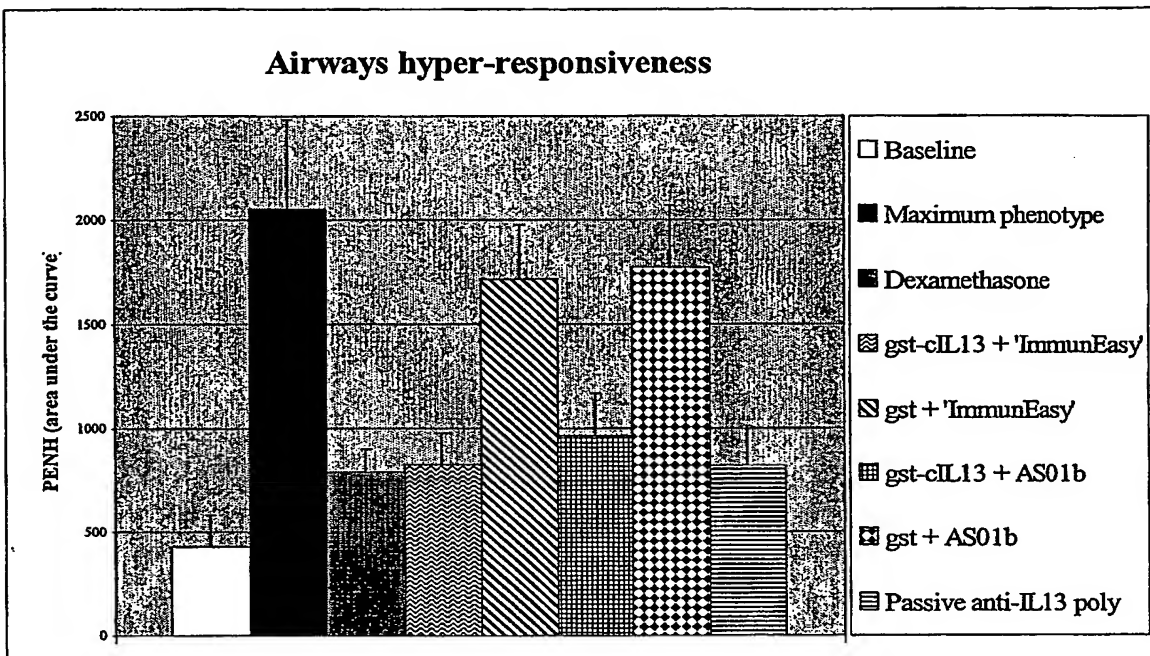


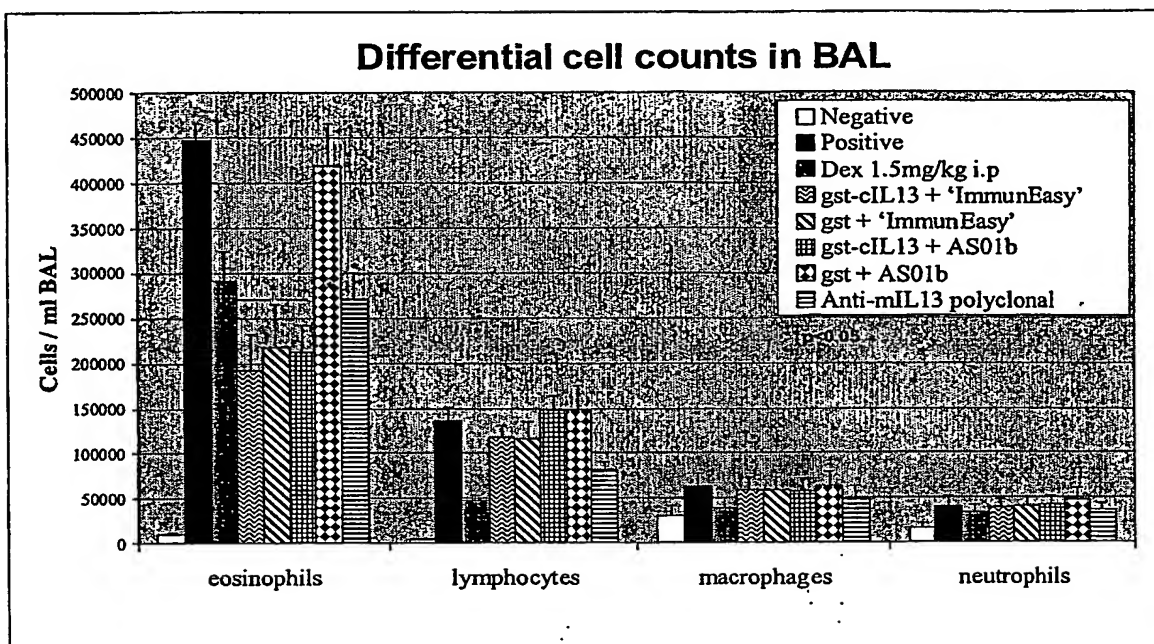
Figure 23,



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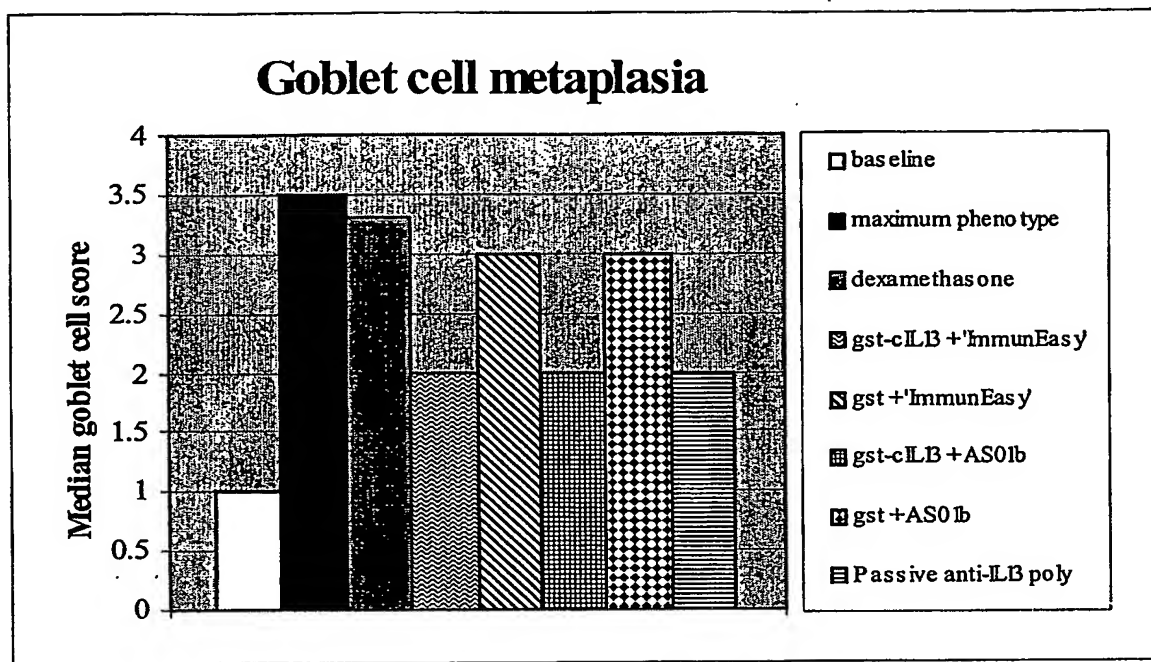
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Figure 24,



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Figure 25,



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Figure 26A, gst-cIL13 + 'ImmunEasy'

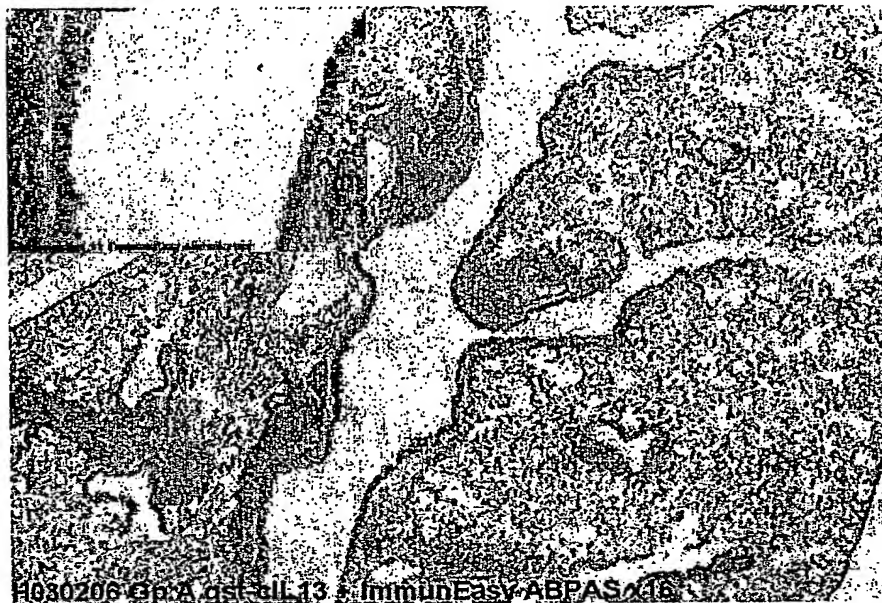
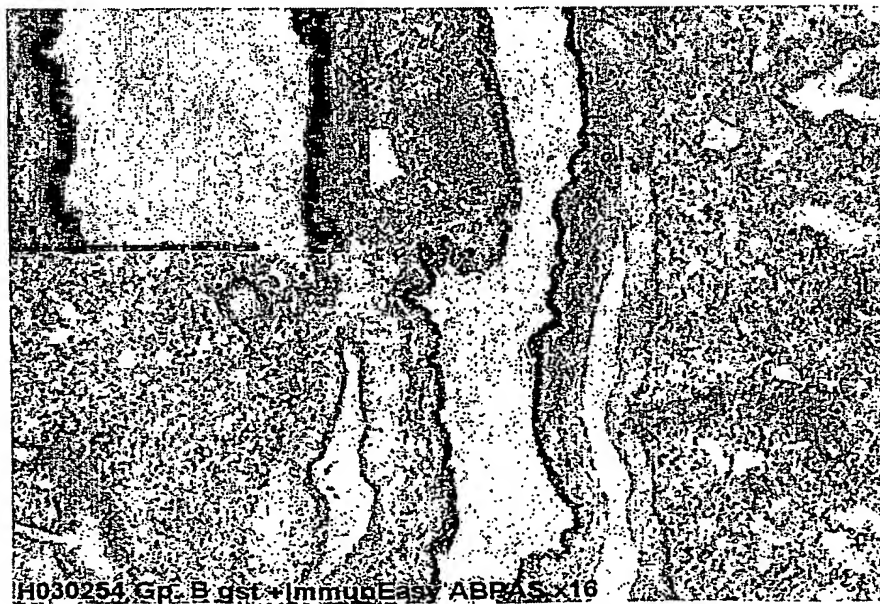


Figure 26B, gst + 'ImmunEasy'



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Figure 27A, gst-cIL13 + liposomes + 3D-MPL + QS21

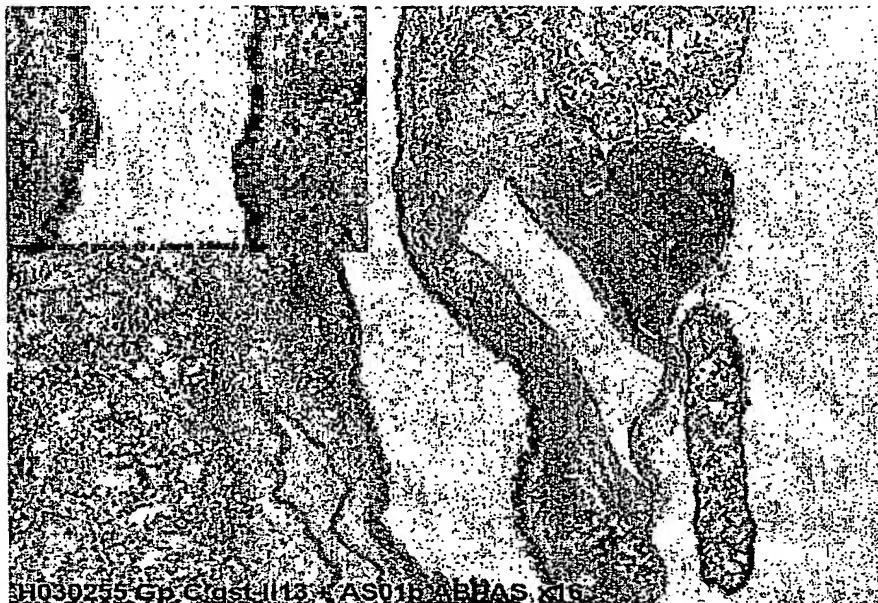
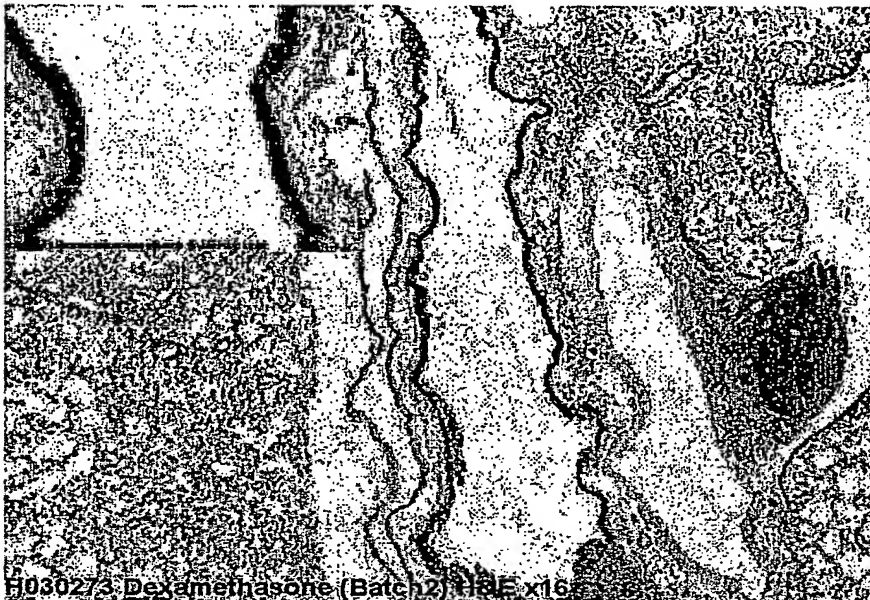


Figure 27B, gst + liposomes + 3D-MPL + QS21



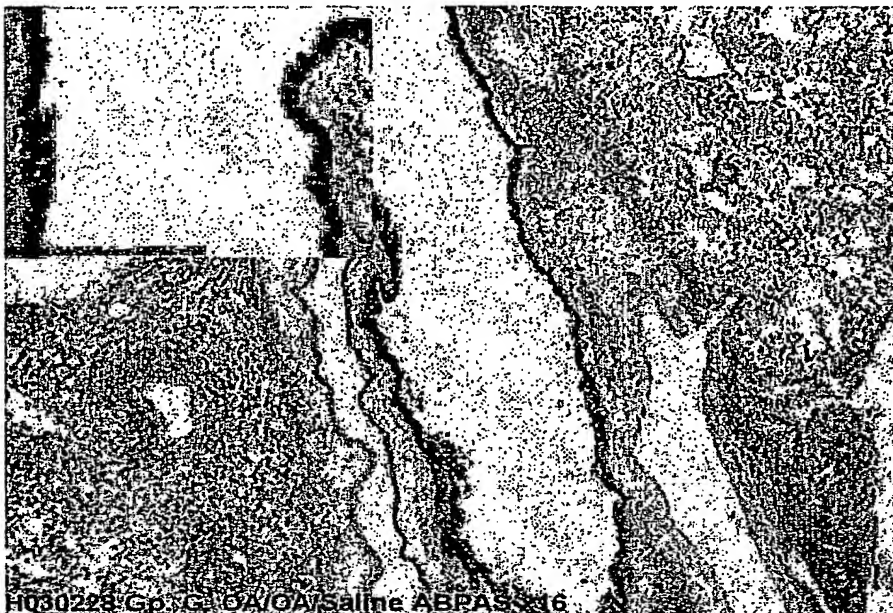
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Figure 28, Dexamethasone



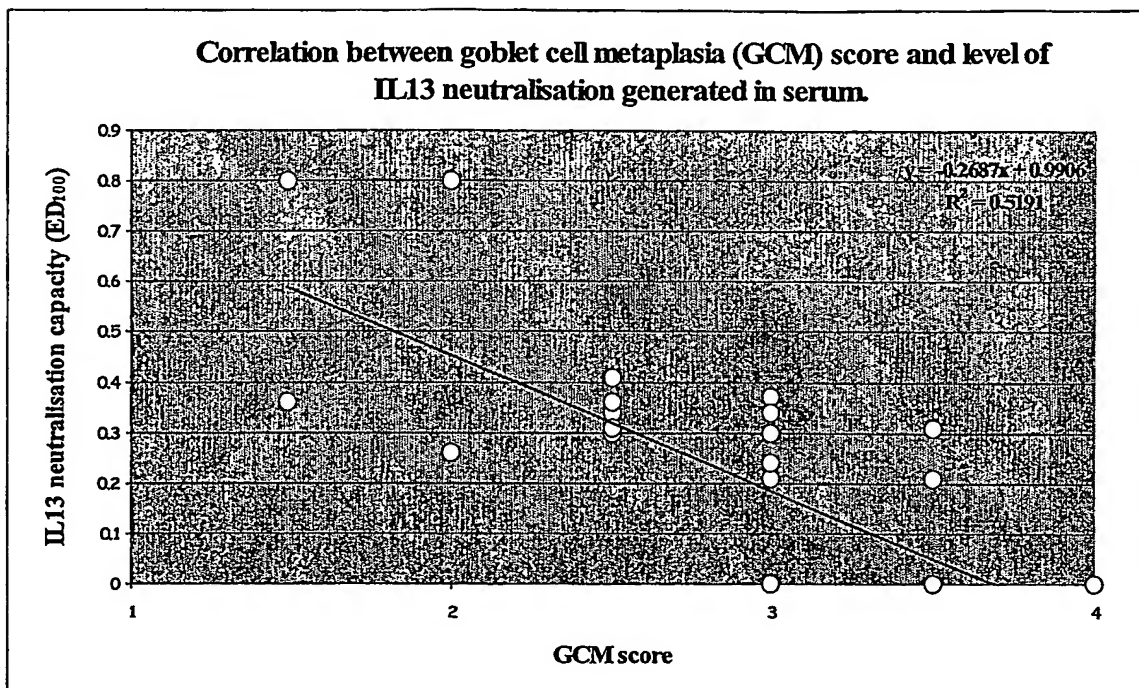
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Figure 29, Maximal asthmatic phenotype



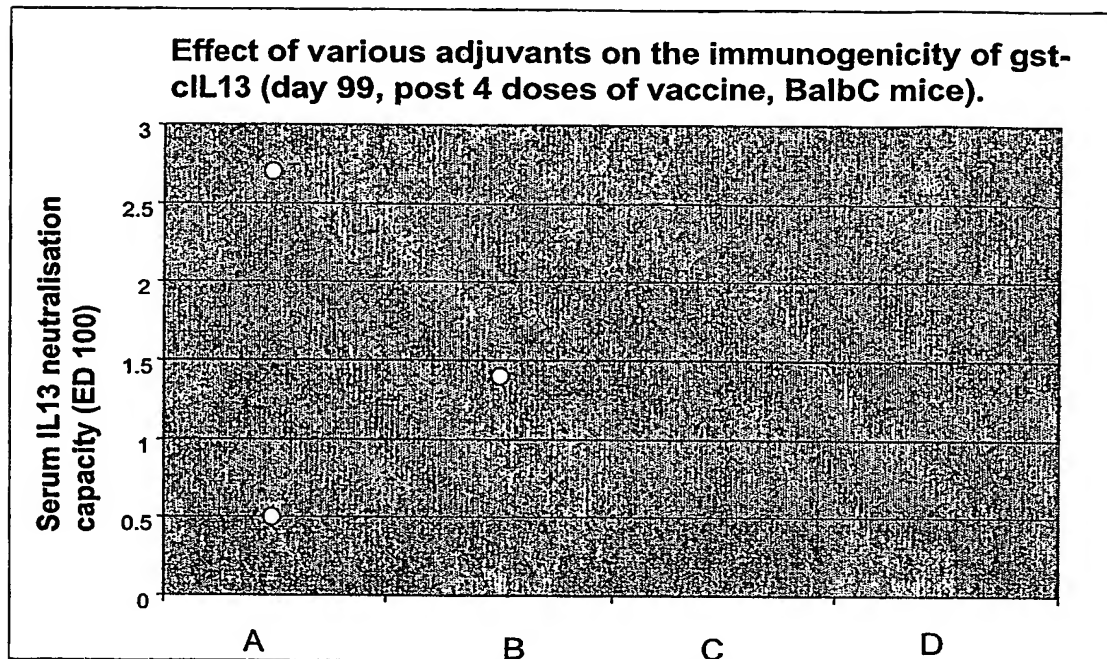
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Figure 30,



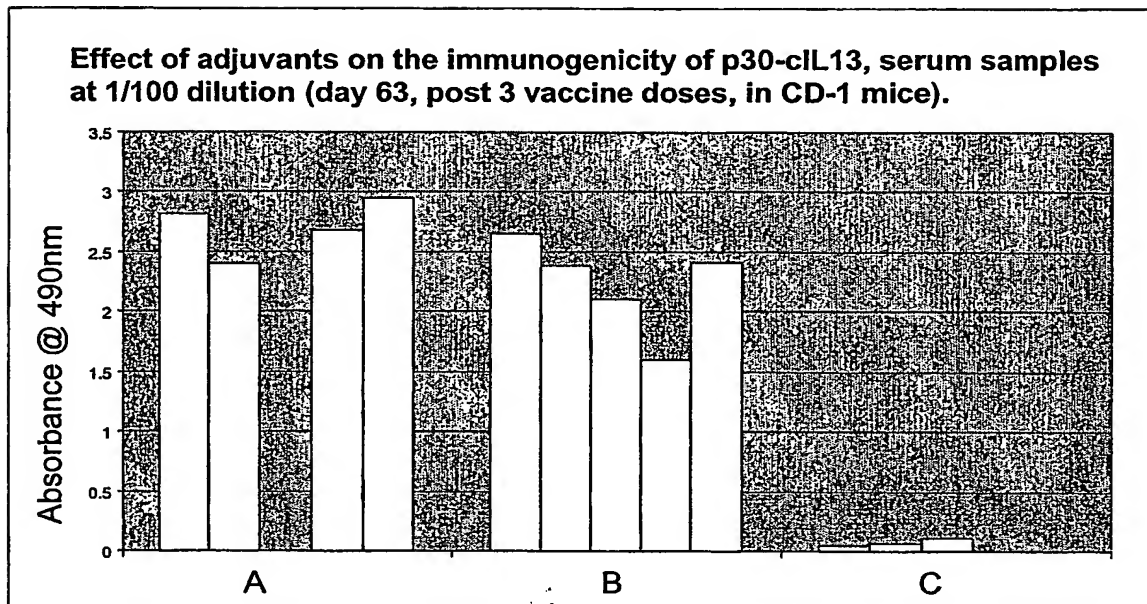
BEST AVAILABLE COPY

Figure 31



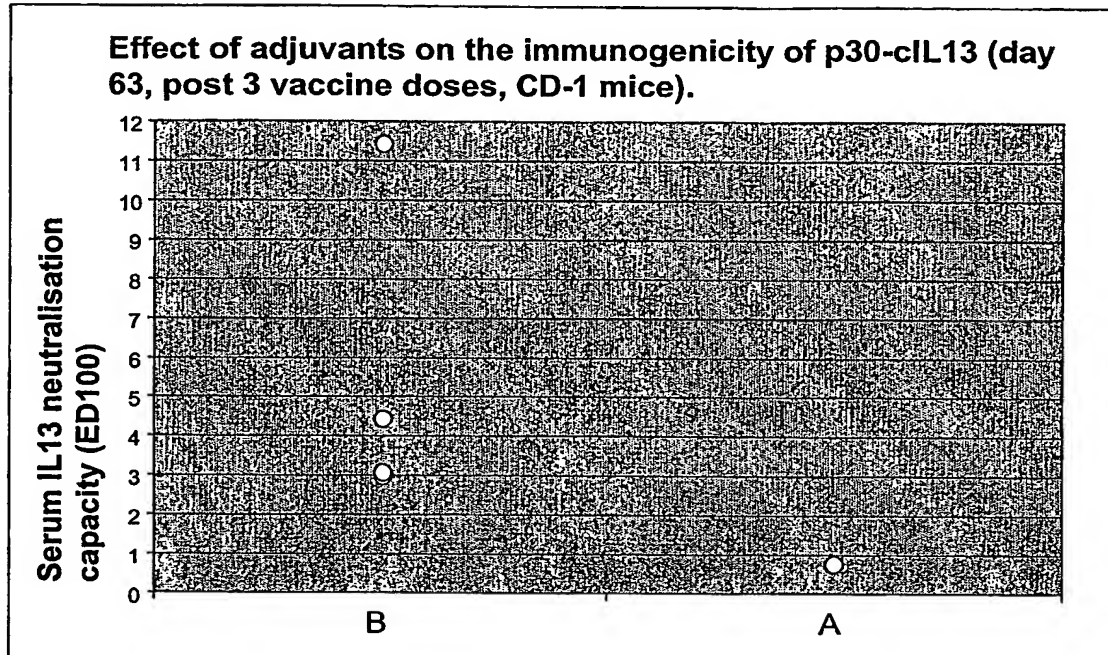
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Figure 32,



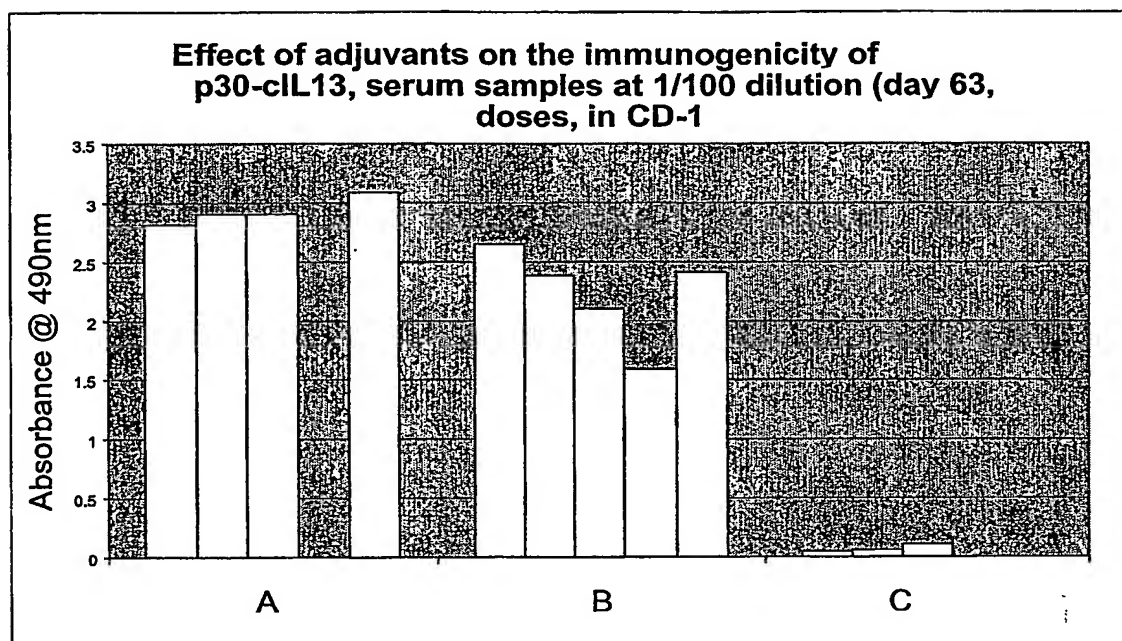
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Figure 33,



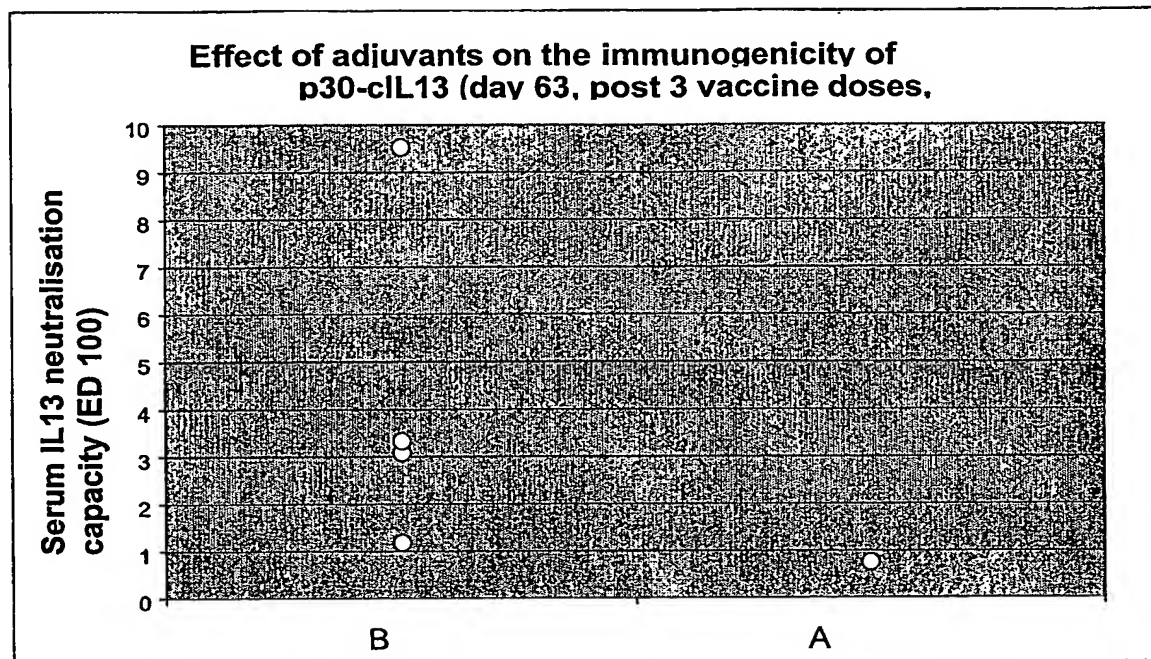
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Figure 34,



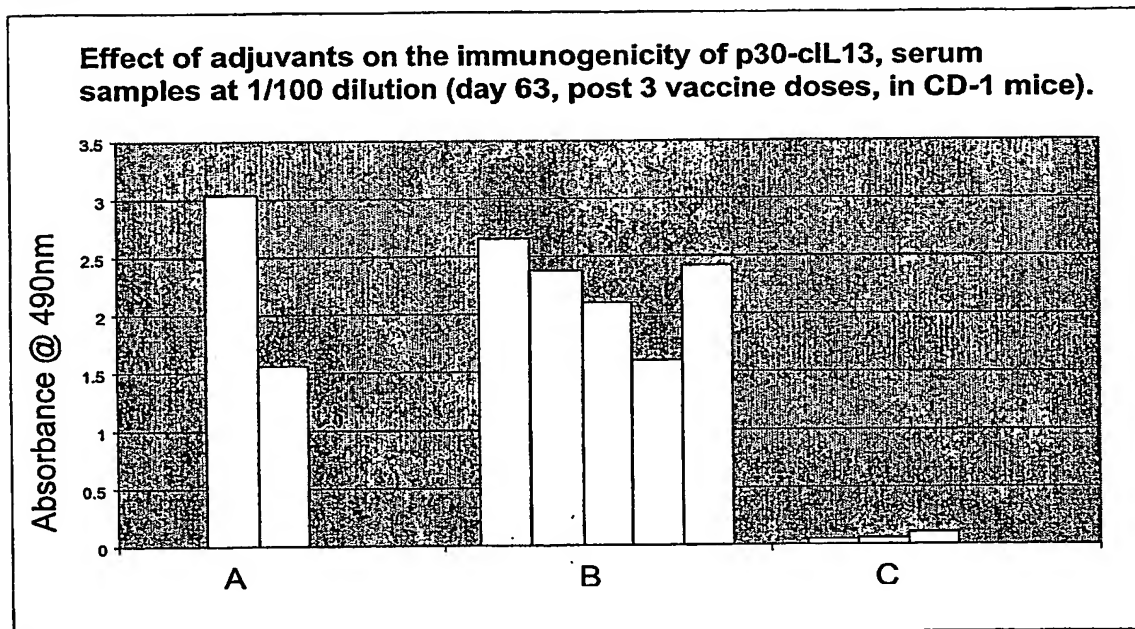
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Figure 34,



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Figure 36,



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Figure 37,

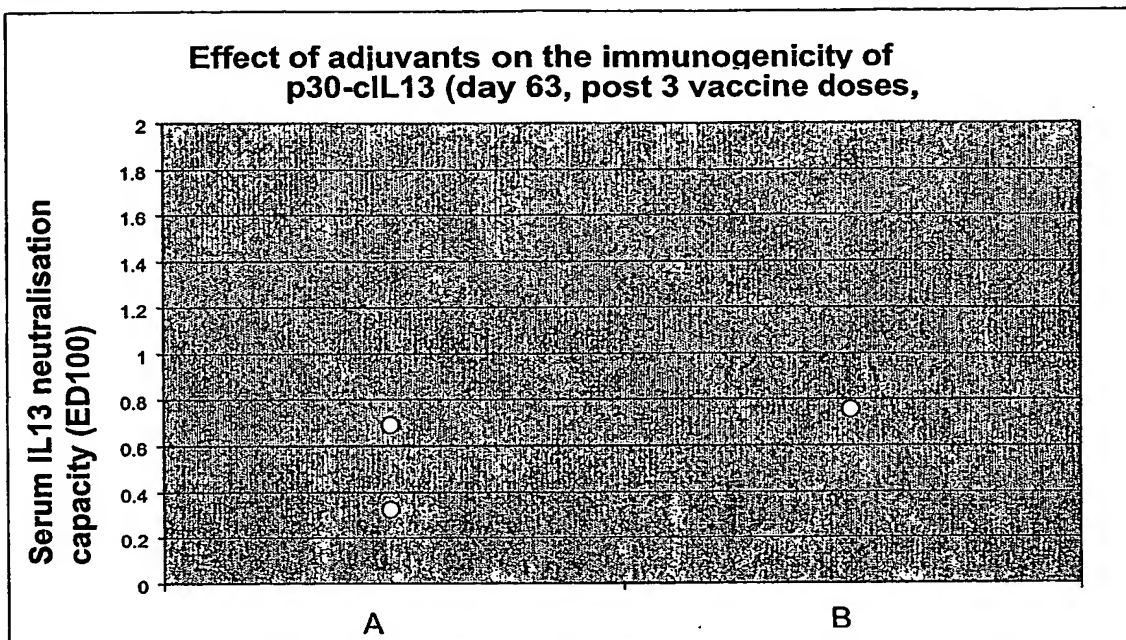


FIG 38, SEQ ID NO. 30

1 GGGCCGGTGCCAAGATCTGTGTCTCTCCCTCTGACCCTTAGGGAGCTCATTGAGGAGCTG 60
-----+-----+-----+-----+-----+
G P V P R S V S L P L T L R E L I E E L

61 GTCAACATCACACAAGACCAGACTCCCCTGTGCAACGGCAGCATGGTATGGAGTGTGGAC 120
-----+-----+-----+-----+-----+
V N I T Q D Q T P L C N G S M V W S V D

121 CTGGCCGCTGGCGGGTACTGTGCAGCCCTGGAATCCCTGACCAACATCTCCAATTGCAAT 180
-----+-----+-----+-----+-----+
L A A G G Y C A A L E S L T N I S N C N

181 GCCATCGAGAAGACCCAGAGGATGCTGGGCGGACTCTGTAACCGCAAGGCCCCCACTACG 240
-----+-----+-----+-----+-----+
A I E K T Q R M L G G L C N R K A P T T

241 GTCTCCAGCCTCCCCGATACCAAATCGAGGTGGCCCAGTTTGTAAGGACCTGCTCAGC 300
-----+-----+-----+-----+-----+
V S S L P D T K I E V A Q F V K D L L S

301 TACACAAAGCAACTGTTTCGCCACGGCCCCTTCTAA 336
-----+-----+-----+-----+
Y T K Q L F R H G P F *